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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/527,187

**Applicant(s)**

LI ET AL.

**Examiner**

DAI A. PHUONG

**Art Unit**

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 April 2009.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 14-33 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 14-33 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 10 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Reply Appeal Brief***

1. In view of the Appeal Brief filed on 04/14/2009, PROSECUTION IS HEREBY REOPENED. A new grounds of rejection are set forth below.

***Claim Objections***

2. Claims 14-15, 17, 19, 23, 26 and 30-31 are objected to because of the following informalities:

Regarding claim 14, lines 8-10 recite "the routing device". It should be corrected as - - the central routing device - -.

Regarding claim 15, line 6 recites "the routing device". It should be corrected as - - the central routing device - -.

Regarding claim 17, line 6 recites "the routing device". It should be corrected as - - the central routing device - -.

Regarding claims 19 and 26, lines 6-7 recite "the routing device". It should be corrected as - - the central routing device - -.

Regarding claims 23 and 30, line 2 recites "the routing device". It should be corrected as - - the central routing device - -.

Regarding claim 31, line 9 recites "the routing device". It should be corrected as - - the central routing device - -.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 14-16, 19-20 and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over White (U.S. 7433691) in view of De Brito (U.S. 6529735).

Regarding claim 14, White discloses a method for routing a connection from a first mobile station to a second mobile station by way of at least one further mobile station in a wireless communication system (fig. 1, Abstract), comprising:

generating routing information at the routing device (access point) corresponding to the determined route (location) (col. 3, line 35 col. 5, line 20); and

transmitting the routing information from the routing device to the first mobile station, the second mobile station and the further mobile station (col. 3, line 35 col. 5, line 20).

However, White does not disclose acquiring positional information on the first mobile station, the second mobile station and the further mobile station; determining a route for the connection at a central routing device based on the positional information.

In an analogous art, De Brito discloses acquiring positional information on the first mobile station, the second mobile station and the further mobile station (col. 4, lines 20-34);

determining a route for the connection (select one of the devices) at a central routing device (communication network) based on the positional information (col. 3, line 42 to col. 4, line 34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of White by specifically including acquiring positional information on the first mobile station, the second mobile station and the further mobile station; determining a route for the connection at a central routing device based on the positional information, as taught by De Brito, the motivation being in order to route a call to the nearest party based on location information.

Regarding claim 15, the combination of White and De Brito disclose all limitations in claim 14. Further, White discloses the method wherein the wireless communication system operates in conjunction with a cellular mobile wireless network having base stations, the first, second(col. 3, line 35 col. 5, line 20) and further mobile stations are located in wireless range of at least one base station of the cellular mobile wireless network, the routing device transmits the routing information to the at least one base station (col. 3, line 35 col. 5, line 20), and the at least one base station transmits the routing information to the first, second and further mobile stations (col. 3, line 35 col. 5, line 20).

Regarding claim 16, the combination of White and De Brito disclose all limitations in claim 14. Further, De Brito discloses the method wherein the mobile stations determine the positional information and transmit the routing information to the at least one base station (col. 1, lines 45-60).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of White by specifically wherein the mobile stations determine the positional information and transmit the routing information to the at least one base station, as taught by De Brito, the motivation being in order to assess call charges, to collect usage and traffic pattern data and in connection with emergencies.

Regarding claim 19, the combination of White and De Brito disclose all limitations in claim 14. Further, White discloses the method wherein the second mobile station makes available a particular service, service information concerning the service is stored in a storage device, the service information is provided from the storage device to the first mobile station, after the first mobile station receives the service information, the first mobile station signals to the routing device that the first mobile station would like to access the service, and after being signaled by the first mobile station, the routing device establishes a service connection for the service from the first mobile station to the second mobile station by generating routing information for the service connection (col. 3, line 35 col. 5, line 20).

Regarding claim 20, the combination of White and De Brito disclose all limitations in claim 19. Further, White discloses the method wherein the wireless communication system operates in conjunction with a cellular mobile wireless network having base stations, the first, second and further mobile stations are located in wireless range of at least one base station of the cellular mobile wireless network, the at least one base station broadcasts the service information stored in the storage device (col. 3, line 35 col. 5, line 20).

Regarding claim 31, White discloses a wireless communication system, comprising:

a first mobile station, a second mobile station and at least one further mobile station (fig. 1, col. 3, line 35 col. 5, line 20)

a central routing device (access point) to determine a route for a connection between the first mobile station and the second mobile station via the further mobile station and to generate routing information for the route, the route being determined based on the positional information stored in the storage device (col. 3, line 35 col. 5, line 20); and

a transmit unit provided in the routing device to transmit the routing information to the first mobile station, the second mobile station and the further mobile station (col. 3, line 35 col. 5, line 20).

However, White does not disclose a storage device to store positional information regarding the first mobile station, the second mobile station and the further mobile station.

In an analogous art, De Brito discloses a storage device to store positional information regarding the first mobile station, the second mobile station and the further mobile station (col. 3, line 42 to col. 4, line 34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of White by specifically including a storage device to store positional information regarding the first mobile station, the second mobile station and the further mobile station, as taught by De Brito, the motivation being in order to route a call to the nearest party based on location information.

Regarding claim 32, White discloses a central routing device for a wireless communication system, comprising: a route generating unit to generate a route for a connection

between a first mobile station and a second mobile station by way of at least one further mobile station using positional information; and a transmit unit to transmit routing information corresponding to the route, to the first mobile station, the second mobile station and the further mobile station (col. 3, line 35 col. 5, line 20).

However, White does not disclose using positional information for the first mobile station, the second mobile station and the further mobile station.

In an analogous art, De Brito discloses a route generating unit to generate a route for a connection between a first mobile station and a second mobile station using positional information for the first mobile station, the second mobile station and the further mobile station (col. 3, line 42 to col. 4, line 34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of White by specifically including a route generating unit to generate a route for a connection between a first mobile station and a second mobile station using positional information for the first mobile station, the second mobile station and the further mobile station, as taught by De Brito, the motivation being in order to route a call to the nearest party based on location information.

Regarding claim 33, White discloses a mobile station for a wireless communication system, comprising:

a receiver to receive and evaluate connection routing information generated by a central routing device based on positional information (col. 3, line 35 col. 5, line 20); and a transmitter to transmit data received from the first mobile unit to the second mobile unit according to the



connection routing information, to thereby establish a connection between the first and second mobile units (col. 3, line 35 col. 5, line 20).

However, White does not disclose “based on positional information for the mobile station, a first mobile unit and a second mobile unit”.

In an analogous art, De Brito discloses a receiver to receive and evaluate connection routing information generated by a central routing device based on positional information for the mobile station, a first mobile unit and a second mobile unit (col. 3, line 42 to col. 4, line 34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of White by specifically including a receiver to receive and evaluate connection routing information generated by a central routing device based on positional information for the mobile station, a first mobile unit and a second mobile unit, as taught by De Brito, the motivation being in order to route a call to the nearest party based on location information.

5. Claims 17-18 and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over White (U.S. 7433691) in view of De Brito (U.S. 6529735) and further in view of Shyy et al. (Pub. No.: 20050282554).

Regarding claim 17, the combination of Daniel Camara et al. and Mansour disclose all limitations in claim 15. However, the combination of Daniel Camara et al. and Mansour does not disclose the method wherein the mobile stations have a first operating mode in which they operate in the cellular mobile wireless network in accordance with a first wireless standard, the

mobile stations have a second operating mode in which they form an ad-hoc network with one another in accordance with a second wireless standard, and during the connection for which the routing device determines the routing information, the mobile stations operate in the second operating mode.

In an analogous art, Shyy et al. disclose the method wherein the mobile stations have a first operating mode in which they operate in the cellular mobile wireless network in accordance with a first wireless standard, the mobile stations have a second operating mode (Bluetooth) in which they form an ad-hoc network with one another in accordance with a second wireless standard, and during the connection for which the routing device determines the routing information, the mobile stations operate in the second operating mode ([0029] to [0044]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of White by specifically including disclose the method wherein the mobile stations have a first operating mode in which they operate in the cellular mobile wireless network in accordance with a first wireless standard, the mobile stations have a second operating mode in which they form an ad-hoc network with one another in accordance with a second wireless standard, and during the connection for which the routing device determines the routing information, the mobile stations operate in the second operating mode, as taught by Shyy et al., the motivation being in order to balance cell loads or prevent cell congestion.

Regarding claim 18, the combination of White and De Brito and Shyy et al. disclose all limitations in claim 14. Further, Shyy et al. disclose the method wherein the mobile stations

operate in the second operating mode only when the cellular mobile wireless network reaches a capacity limit ([0029] to [0044]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of White by specifically including the mobile stations operate in the second operating mode only when the cellular mobile wireless network reaches a capacity limit, as taught by Shyy et al., the motivation being in order to balance cell loads or prevent cell congestion.

Regarding claim 24, the combination of White and De Brito disclose all limitations in claim 16. However, the combination of White and De Brito do not disclose the method wherein the mobile stations have a first operating mode in which they operate in the cellular mobile wireless network in accordance with a first wireless standard, the mobile stations have a second operating mode in which they form an ad-hoc network with one another in accordance with a second wireless standard, and during the connection for which the routing device determines the routing information, the mobile stations operate in the second operating mode.

In an analogous art, Shyy et al. disclose wherein the mobile stations have a first operating mode in which they operate in the cellular mobile wireless network in accordance with a first wireless standard, the mobile stations have a second operating mode (Bluetooth) in which they form an ad-hoc network with one another in accordance with a second wireless standard, and during the connection for which the routing device determines the routing information, the mobile stations operate in the second operating mode ([0029] to [0044]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of White by specifically including wherein the mobile stations have a first operating mode in which they operate in the cellular mobile wireless network in accordance with a first wireless standard, the mobile stations have a second operating mode in which they form an ad-hoc network with one another in accordance with a second wireless standard, and during the connection for which the routing device determines the routing information, the mobile stations operate in the second operating mode, as taught by Shyy et al., the motivation being in order to balance cell loads or prevent cell congestion.

Regarding claim 25, the combination of White and De Brito and Shyy et al. disclose all limitations in claim 24. Further, Shyy et al. disclose the method wherein the mobile stations operate in the second operating mode only when the cellular mobile wireless network reaches a capacity limit ([0029] to [0044]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of White by specifically including the mobile stations operate in the second operating mode only when the cellular mobile wireless network reaches a capacity limit, as taught by Shyy et al., the motivation being in order to balance cell loads or prevent cell congestion.

Regarding claim 26, the combination of White and De Brito and Shyy et al. disclose all limitations in claim 25. Further, White discloses the method wherein the second mobile station makes available a particular service, service information concerning the service is stored in a storage device, the service information is provided from the storage device to the first mobile station, after the first mobile station receives the service information, the first mobile station

signals to the routing device that the first mobile station would like to access the service, and after being signaled by the first mobile station, the routing device establishes a service connection for the service from the first mobile station to the second mobile station by generating routing information for the service connection (col. 3, line 35 col. 5, line 20).

Regarding claim 27, the combination of White and De Brito and Shyy et al. disclose all limitations in claim 26. Further, White discloses the method wherein the at least one base station broadcasts the service information stored in the storage device (col. 3, line 35 col. 5, line 20).

6. Claims 21-22 and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over White (U.S. 7433691) in view of De Brito (U.S. 6529735) and further in view of Malladi et al. (Pub. NO.: 20030081586).

Regarding claim 21, the combination of White and De Brito disclose all limitations in claim 14. However, the combination of White and De Brito do not disclose wherein the routing information describes a transmit power level with which the first, second and further mobile stations are to operate for the connection.

In an analogous art, Malladi et al. disclose the method wherein the routing information (transmission signal 106) describes a transmit power level with which the first, second and further mobile stations are to operate for the connection (Fig. 1, Abstract and [0014] to [0016]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of White by specifically including wherein the routing information describes a transmit power level with which the first, second and further

mobile stations are to operate for the connection, as taught by Malladi et al., the motivation being in order to provide downlink signal power to each mobile stations.

Regarding claim 22, the combination of White and De Brito and Malladi et al. disclose all limitations in claim 14. However, the combination of White and De Brito do not disclose the method wherein the routing information describes transmission resources which the first, second and further mobile stations are to reserve for the connection

In an analogous art, Malladi et al. disclose the method wherein the routing information (transmission signal 106) describes transmission resources which the first, second and further mobile stations are to reserve for the connection (Fig. 1, Abstract and [0014] to [0016]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of White by specifically including the routing information (transmission signal 106) describes transmission resources which the first, second and further mobile stations are to reserve for the connection, as taught by Malladi et al., the motivation being in order to provide downlink signal power to each mobile stations.

Regarding claim 28, the combination of White and De Brito disclose all limitations in claim 27. However, the combination of White and De Brito do not disclose wherein the routing information describes a transmit power level with which the first, second and further mobile stations are to operate for the connection.

In an analogous art, Malladi et al. disclose the method wherein the routing information (transmission signal 106) describes a transmit power level with which the first, second and further mobile stations are to operate for the connection (Fig. 1, Abstract and [0014] to [0016]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of White by specifically including wherein the routing information describes a transmit power level with which the first, second and further mobile stations are to operate for the connection, as taught by Malladi et al., the motivation being in order to provide downlink signal power to each mobile stations.

Regarding claim 29, the combination of White and De Brito and Malladi et al. disclose all limitations in claim 28. However, the combination of White and De Brito do not disclose the method wherein the routing information describes transmission resources which the first, second and further mobile stations are to reserve for the connection

In an analogous art, Malladi et al. disclose the method wherein the routing information (transmission signal 106) describes transmission resources which the first, second and further mobile stations are to reserve for the connection (Fig. 1, Abstract and [0014] to [0016]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of White by specifically including the routing information (transmission signal 106) describes transmission resources which the first, second and further mobile stations are to reserve for the connection, as taught by Malladi et al., the motivation being in order to provide downlink signal power to each mobile stations.

7. Claims 23 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over White (U.S. 7433691) in view of De Brito (U.S. 6529735) and further in view of Malladi et al. (Pub. NO.: 20030081586) and further in view of Shyy et al. (Pub. No.: 20050282554).

Regarding claim 23, the combination of White and De Brito and Malladi et al. disclose all limitations in claim 22. However, White and De Brito and Malladi et al. do not disclose the method wherein when the connection is to be terminated, the routing device instructs the first, second and further mobile stations to free the transmission resources used for the connection.

In an analogous art, Shyy et al. disclose the method wherein when the connection is to be terminated, the routing device instructs the first, second and further mobile stations to free the transmission resources used for the connection ([0029] to [0044]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of White by specifically including the method wherein when the connection is to be terminated, the routing device instructs the first, second and further mobile stations to free the transmission resources used for the connection, as taught by Shyy et al., the motivation being in order to balance cell loads or prevent cell congestion.

Regarding claim 30, the combination of White and De Brito and Malladi et al. disclose all limitations in claim 29. However, White and De Brito and Malladi et al. do not disclose the method wherein when the connection is to be terminated, the routing device instructs the first, second and further mobile stations to free the transmission resources used for the connection.

In an analogous art, Shyy et al. disclose the method wherein when the connection is to be terminated, the routing device instructs the first, second and further mobile stations to free the transmission resources used for the connection ([0029] to [0044]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of White by specifically including the method



Art Unit: 2617

wherein when the connection is to be terminated, the routing device instructs the first, second and further mobile stations to free the transmission resources used for the connection, as taught by Shyy et al., the motivation being in order to balance cell loads or prevent cell congestion.

### **Conclusion**

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dai A Phuong whose telephone number is 571-272-7896. The examiner can normally be reached on Monday to Friday, 9:00 A.M. to 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on 571-272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dai A Phuong/

Examiner, Art Unit 2617

Date: 11/05/2009

PS